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1. This kind of water wheel is propelled completely by water power. In the mountainous areas of Hunan and Kweichow where the water flows rapidly, such utilization of natural water power is very widespread. It is not found only in Miao areas. Sung Ying-hsing of the Ming period wrote in his Tien Kung Kai Wu: "The rapid water flowing underneath the wheel makes it rotate, forcing the water into tubes, one by one leading into another bamboo tube and flowing into the field. It never stops day or night; there is no worry for a hundred fields (see Vol. I, 'Nai Li /Grains/')." A kind of water mill (Illus. 31) used in the Miao area also utilizes natural water power.

The size of the water wheel depends upon the height of the terraced fields. By means of long and short bamboo tubes the water is conducted to near and distant fields. The terraced fields in the Miao area involve considerable labor. On a slope where there is a spring, earth is scooped out to make raised paths between fields, which act as dikes, going up in tiers, or stones are piled up to make embankments on both banks of a stream. These man-made terraced fields require a great deal of time and labor and are susceptible to drought. For they rise from the foot to the waist of the mountain, tier by tier, like a ladder, so that it is very easy for the water in the fields to leak away. But in the event of a shortage of rainfall, when the spring fed by mountain streams dries up, irrigation stops

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342 Caption for Fig. 70 (below). Dwelling house 7 in the Meau village Nam Fa, framework.

[353] Key to symbols:

A = storage lofts
B = supporting posts
C = ridge post
H = crossbeam of roof
J = roof beam
K = longitudinal roof beam
L = ladder to the storage loft

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[322] The boards of the house wall (Ill. 106), roughly hewn with the ax, are about three to four centimeters thick and between 15 and 35 centimeters wide. They are /Fig. 71 appears here/ not joined to one another tightly, but rather show narrower or wider spaces, through which air and light can enter the windowless room. The boards are thrust into the loamy ground and tied on the inside and outside to a lower and an upper crossbeam, which in turn are fastened to the supporting posts driven firmly into the ground (Fig. 71; further, the chapter, "Household and Kitchen Utensils," Fig. 117). Lajonquière (1), in connection with the

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1. II, p. 306.

description of the Meau houses in Tonkin, mentions, besides walls "made of planks nowhere fitting together," which he calls the "ordinary type," also walls made of pounded earth, which occur only in "the most complete type of house." Abadie (2),

2. Page 156.

[556] too, mentions that the houses of the rich have walls of pounded earth or mud, and describes their erection as follows: "The pounded earth is prepared in two ways. The earth, kneaded with water, is dried in the sun in a form in the shape of a parallelepiped and, depending on the thickness of the wall, is put side by side in double or triple layers. In the second case the moistened earth is tamped down between two boards, the space

[SEE Cat 116, P 706 - ANALYST]

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342 between them corresponding to the thickness of the wall, with
333 the help of clubs. Then the boards are removed and, depending
184 on the height of the wall, again set up above by fastening them to the transverses set into the wall."

[556] [177] In any case, however, houses built out of mud only represent exceptions among the Meau and may depend not so much on the wealth of the family as on the building material available and the influence of neighboring peoples.

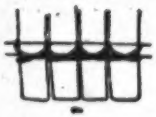

Fig. 71.
342 Fastening of the wall boards among the Meau. About 1/40 nat. size.

The floor in all the rooms is the clay soil stamped hard (Ill. 107).[1]

The storage lofts rest on the roof beam and the crossbeam (Fig. 66) and consist of strong wooden beams over which narrow rough-hewn boards are laid (Ill. 106). Upon them,
353 piled high, rests a mass of household goods, such as old saddle and harness equipment, antlers, hides, fish nets, binding material bound together in large rolls, baskets of every /275/ size, yokes for the draft animals, carrying bags, hemp, tobacco, and the like. A part of the storage lofts also often serves for the
[251] storing of food supplies, such as smoked meat, ears of maize, tubers, grain, and so forth. Various devices to hang things on are put on the beams of the storage lofts (Ill. 100).[2]

[342] Savina (1) reports on this: "Still to be pointed out are

1. II, p. 200.

the two platforms which are found above the two side rooms.
[251] They serve as granaries for the annual harvest: rice, maize, grain, sorghum, beans, potatoes, hemp, tobacco, etc. At night the rats make a hellish noise here."

The storage lofts are reached by means of ladders (see the chapter, "House Furnishings, Household and Kitchen Utensils," Fig. 137 and Fig. 138).

342 The roof truss (Figs. 75 and 76) consists of rafters lashed to-
184 gether, which are tied to the ridge stringer (Fig. 76, A), which

1 [see cart 116, p706 - ANALYST]
2 [" " " p665- "]